

Week 14 IP Part 4

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9/9/2021

```
# Load libraries
suppressWarnings(
  suppressMessages(if
    (!require(tidyverse, quietly=TRUE))
      install.packages("tidyverse")))
library(tidyverse)
suppressWarnings(
  suppressMessages(if
    (!require(anomalize, quietly=TRUE))
      install.packages("anomalize")))
library(anomalize)
suppressWarnings(
  suppressMessages(if
    (!require(tibbletime, quietly=TRUE))
      install.packages("tibbletime")))
library(tibbletime)
suppressWarnings(
  suppressMessages(if
    (!require(dplyr, quietly=TRUE))
      install.packages("dplyr")))
library(dplyr)
```

```
#Load the data
sales <- read.csv("C:/Users/Rino/Desktop/Remote/Supermarket_Sales_Forecasting - Sales.csv")
sales$Date <- as.Date(sales$Date, format = "%m/%d/%Y")
sales$Date <- sort(sales$Date, decreasing = FALSE)
sales <- as_tbl_time(sales, index = Date)
sales <- sales %>% as_period("daily")
head(sales)
```

```
## # A time tibble: 6 x 2
## # Index: Date
##   Date      Sales
##   <date>    <dbl>
## 1 2019-01-01  549.
## 2 2019-01-02  246.
## 3 2019-01-03  452.
## 4 2019-01-04  464.
## 5 2019-01-05  418.
## 6 2019-01-06  536.
```

```
#Check the shape  
dim(sales)
```

```
## [1] 89 2
```

The data has 89 rows and 2 columns.

```
#Check the structure  
str(sales)
```

```
## tbl_time [89 x 2] (S3: tbl_time/tbl_df/tbl/data.frame)  
## $ Date : Date[1:89], format: "2019-01-01" "2019-01-02" ...  
## $ Sales: num [1:89] 549 246 452 464 418 ...  
## - attr(*, "index_quo")= language ~Date  
## ..- attr(*, ".Environment")=<environment: R_GlobalEnv>  
## - attr(*, "index_time_zone")= chr "UTC"
```

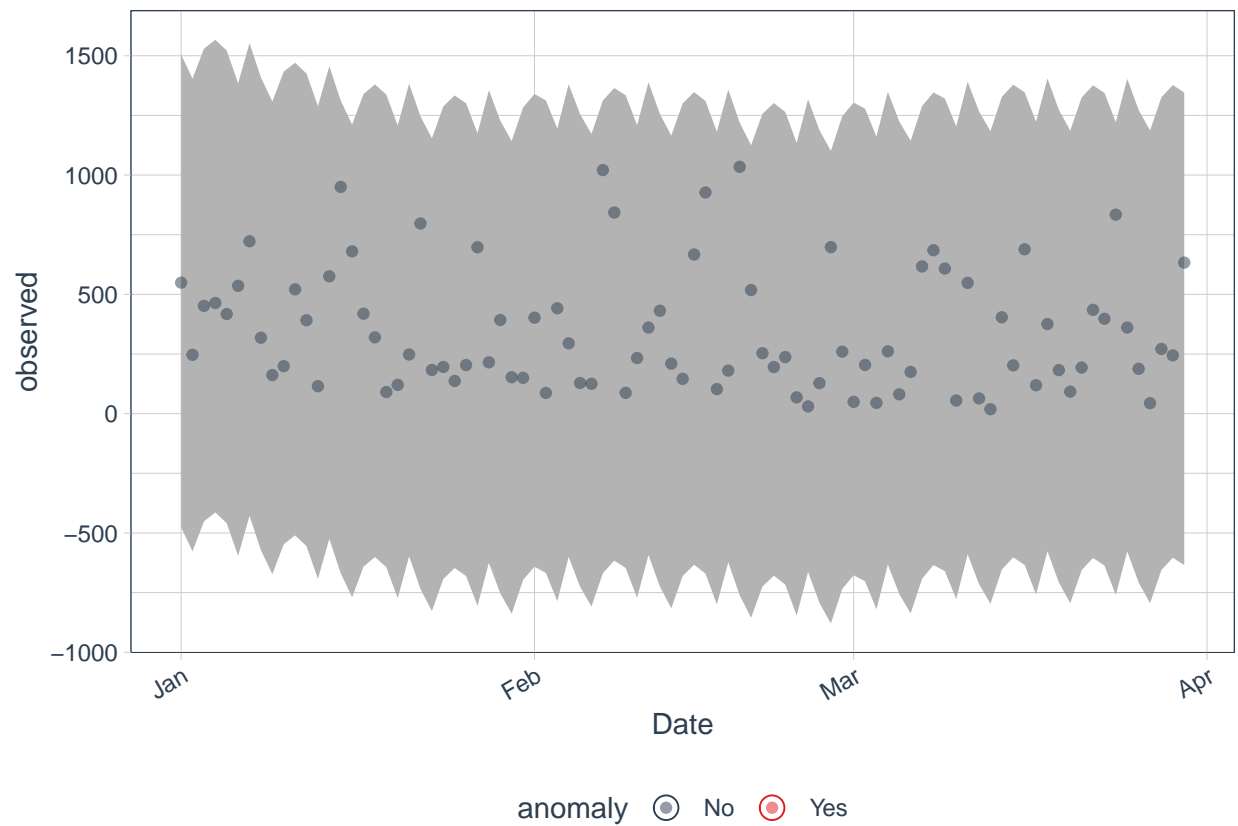
```
# Detecting our anomalies  
sales %>%  
  time_decompose(Sales) %>%  
  anomalise(remainder) %>%  
  time_recompose() %>%  
  plot_anomalies(time_recomposed = TRUE, ncol = 3, alpha_dots = 0.5)
```

```
## frequency = 7 days
```

```
## trend = 30 days
```

```
## Registered S3 method overwritten by 'quantmod':  
##   method      from  
##   as.zoo.data.frame zoo
```

```
## Warning: 'type_convert()' only converts columns of type 'character'.  
## - 'df' has no columns of type 'character'
```



There are no anomalies in our dataset.